

NETWORK-1 SECURITY SOLUTIONS, INC.

Filed Pursuant to Rule 424(b)(3)
Registration No. 333-143710

PROSPECTUS SUPPLEMENT NO. 6 (To Prospectus dated June 24, 2011)

This is a prospectus supplement to our prospectus dated June 24, 2011 (the "Prospectus") relating to the resale from time to time by selling stockholders of up to 8,373,246 shares of our common stock, including shares issuable upon exercise of outstanding warrants and options. On February 3, 2012 we filed with the Securities and Exchange Commission a Current Report on Form 8-K. The text of the Current Report on Form 8-K is attached to and a part of this supplement.

This prospectus supplement should be read in conjunction with the Prospectus and may not be delivered or utilized without the Prospectus. This prospectus supplement is qualified by reference to the Prospectus, except to the extent that the information provided by this prospectus supplement supersedes the information contained in the Prospectus.

The securities offered by the Prospectus involve a high degree of risk. You should carefully consider the "Risk Factors" referenced on pages 6-13 of the Prospectus in determining whether to purchase the common stock.

The date of this prospectus supplement is February 3, 2012.

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

Form 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): January 31, 2012

Network-1 Security Solutions, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation)

001-15288
(Commission
File Number)

11-3027591
(IRS Employer
Identification No.)

445 Park Avenue, Suite 1018, New York, New York 10022

(Address of principal executive offices)

Registrant's telephone number, including area code: **(212) 829-5770**

NA

(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (*see* General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
 - Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
 - Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
 - Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
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Item 8.01 Other Events

On February 3, 2012, Network-1 Security Solutions, Inc. (the “Company”) issued a press release announcing that its Board of Directors has authorized an increase to its previously announced share repurchase program pursuant to Rule 10(b)-18 permitting the Company to repurchase up to an additional \$2,000,000 (for a total of up to \$4,000,000) in shares of the Company’s common stock over the next twelve months. The press release is attached as Exhibit 99.1 hereto.

Item 9.01 Financial Statements and Exhibits

| <u>Exhibit Number</u> | <u>Description</u> |
|-----------------------|---------------------------------------|
| 99.1 | Press Release, dated February 3, 2012 |

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

NETWORK-1 SECURITY SOLUTIONS, INC.

Dated: February 3, 2012

By: /s/ Corey M. Horowitz

Name: Corey M. Horowitz

Title: Chairman & Chief Executive Officer

FOR IMMEDIATE RELEASE

Corey M. Horowitz, Chairman and CEO
Network-1 Security Solutions, Inc.
(212) 829-5770

Network-1 Increases its Share Repurchase Program

New York, New York February 2, 2012 -- NETWORK-1 SECURITY SOLUTIONS, INC. (THE "COMPANY") (OTCBB: NSSI) ANNOUNCED TODAY THAT ITS BOARD OF DIRECTORS HAS AUTHORIZED AN INCREASE TO ITS PREVIOUSLY ANNOUNCED SHARE REPURCHASE PROGRAM PURSUANT TO RULE 10(B)-18 PERMITTING THE COMPANY TO REPURCHASE UP TO AN ADDITIONAL \$2,000,000 (FOR A TOTAL OF UP TO \$4,000,000) IN SHARES OF THE COMPANY'S COMMON STOCK OVER THE NEXT TWELVE MONTHS. ON AUGUST 14, 2011, THE COMPANY ANNOUNCED A SHARE REPURCHASE PROGRAM TO PURCHASE UP TO \$2,000,000 OF ITS COMMON STOCK. TO DATE, THE COMPANY HAS REPURCHASED APPROXIMATELY 1,550,000 SHARES UNDER ITS PROGRAM AT AN AVERAGE PRICE OF \$ 1.28 PER SHARE.

THE COMMON STOCK MAY BE REPURCHASED FROM TIME TO TIME IN OPEN MARKET TRANSACTIONS OR PRIVATELY NEGOTIATED TRANSACTIONS IN THE COMPANY'S DISCRETION. THE TIMING AND AMOUNT OF SHARES REPURCHASED WILL BE DETERMINED BY THE COMPANY'S MANAGEMENT BASED ON ITS EVALUATION OF MARKET CONDITIONS AND OTHER FACTORS. THE REPURCHASE PROGRAM MAY BE INCREASED, SUSPENDED OR DISCONTINUED AT ANY TIME.

"WE ARE VERY PLEASED TO ANNOUNCE THIS INCREASE TO OUR REPURCHASE PROGRAM TO BENEFIT SHAREHOLDERS AT A TIME WHEN WE BELIEVE OUR STOCK IS UNDERVALUED," SAID COREY M. HOROWITZ, CHAIRMAN AND CEO OF NETWORK-1. "THE INCREASE OF OUR STOCK REPURCHASE PROGRAM REFLECTS OUR CONFIDENCE IN THE LONG-TERM POTENTIAL FOR NETWORK-1 AND OUR COMMITMENT TO INCREASING SHAREHOLDER VALUE," HE ADDED.

THE SHARE REPURCHASE PROGRAM WAS APPROVED BY THE COMPANY'S BOARD OF DIRECTORS AS PART OF ITS ONGOING CONSIDERATION OF ALTERNATIVE METHODS TO TAKE ADVANTAGE OF THE COMPANY'S STRONG CASH POSITION. THE BOARD OF DIRECTORS BELIEVES THAT INCREASING THE SHARE REPURCHASE PROGRAM AT THIS TIME IS IN THE BEST INTERESTS OF THE COMPANY AND ITS SHAREHOLDERS, AND WILL NOT IMPACT THE COMPANY'S ABILITY TO EXECUTE ITS GROWTH PLANS.

ABOUT NETWORK-1 SECURITY SOLUTIONS, INC.

Network-1 Security Solutions, Inc. is engaged in the acquisition, development, licensing and protection of its intellectual property and proprietary technologies. It currently owns six patents covering various telecommunications and data networking technologies and is currently focusing its licensing efforts on its Remote Power Patent (U.S. Patent No. 6,218,930) covering the remote delivery of power over Ethernet networks. Network-1 has 11 license agreements with respect to its Remote Power Patent, which include, among others, license agreements with Cisco Systems, Inc., Cisco-Linksys, Inc., Extreme Networks, Inc., Netgear Inc. and several other data networking vendors. The Remote Power Patent was granted by the U.S. Office of Patents and Trademarks on April 21, 2001 and expires on March 11, 2020.

This release contains forward-looking statements within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995. These statements address future events and conditions concerning Network-1's business plans. Such statements are subject to a number of risk factors and uncertainties as disclosed in the Network-1's Annual Report on Form 10-K for the year ended December 31, 2010 including, among others, the ability of Network-1 to enter into additional license agreements with third parties for its intellectual property or the intellectual property of its strategic partners, the ability of Network-1 to receive significant royalties from its existing license agreements, the uncertainty of patent litigation, Network-1's ability to achieve revenues and profits from its intellectual property or the intellectual property of its strategic partners, Network-1's ability to execute its strategy to acquire additional patents or enter into strategic relationships with third parties to license or otherwise monetize their intellectual property, the continued viability of the PoE market, future economic conditions and technology changes and legislative, regulatory and competitive developments. Except as otherwise required to be disclosed in periodic reports, Network-1 expressly disclaims any future obligation or undertaking to update or revise any forward-looking statement contained herein.